



SOUTH CAROLINA RABBIT HUNTER SURVEY 2005-06

The Small Game Project, South Carolina Department of Natural Resources (DNR), implemented the South Carolina Rabbit Hunter Survey in the 1991-92 season. The survey was designed to provide reliable, quantitative information about rabbit numbers and rabbit hunter success across the state. The 1991-92 rabbit season marked the first year that information was collected, analyzed and reported.

This report presents information from the latest survey, and due to space, compares data collected for the past 10 years. Information is used to identify trends in rabbit populations and rabbit hunting activities in South Carolina.

METHODS

Individuals contacted for this rabbit hunter survey included respondents to last year's survey, persons who called, emailed or wrote requesting a survey form, and respondents from a 1999-00 Responsive Management Telephone Survey.

A total of 162 individuals were provided with data sheets, instructions and self-addressed stamped envelopes prior to the start of the 2005-06 rabbit-hunting season. Cooperators were asked to keep accurate records of their hunting activities and to provide the following information about each individual hunt: date and county of hunt, number of hunters, number of hours hunted, number of rabbits jumped, number of rabbits harvested, quail coveys flushed and woodcock flushed. Additional information requested included the number and species of rabbits bagged during the season along with comments on dog performance and season quality. Information on food habits, diseases and general comments were also requested.

At the end of the hunting season, a reminder card was sent to each individual asking that the survey form be returned. A period of 60 days was allowed for hunters to respond. Data were analyzed by county, game zone, geographic region and on a statewide basis.

South Carolina is divided into four broad geographical regions (Fig. 1) based on habitat. The "Piedmont", consisting of Game Zones 1, 2, and 4, is the inner most region of the state. The "Midlands" or "Sandhills", Game Zones 3, 5 and 8, extend on a broad northeast/southwest axis across the middle part of the state. The "Pee Dee" region is located on the northern coastal plain and includes Game Zones 7, 9, and 10. The "Low Country" is situated in the southern coastal plain and includes Game Zones 6 and 11.

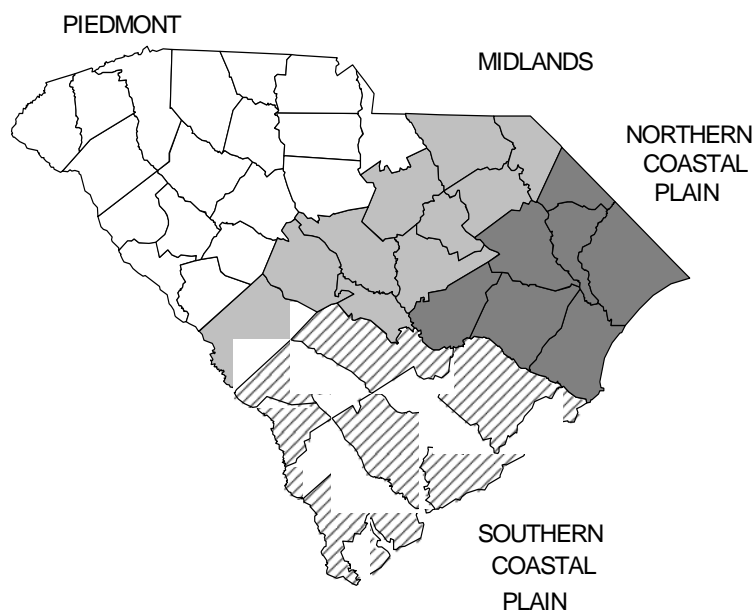


Figure 1. Physiographic regions of South Carolina.

RESULTS AND DISCUSSION

STATEWIDE

A total of 34 individuals responded (1 stating he did not hunt this past season) to the survey with 33 providing usable data. This represents a 21% response from potential cooperators. Survey cooperators recorded 588 hunts and logged 2,718 hours in the field. Hunting parties averaged four individuals per trip and the average hunt length was 4.6 hours. Survey cooperators and their companions expended a minimum of 10,872 man-hours.

Hunting parties jumped an average of 1.39 rabbits per hour and harvested 0.85 rabbits per hour. Based on these figures 61% of the rabbits jumped were harvested. Cottontails (*Sylvilagus floridanus*) were the predominant species reported harvested followed by marsh rabbits (*S. palustris*) and swamp rabbits (*S. aquaticus*), respectively (Fig. 2).

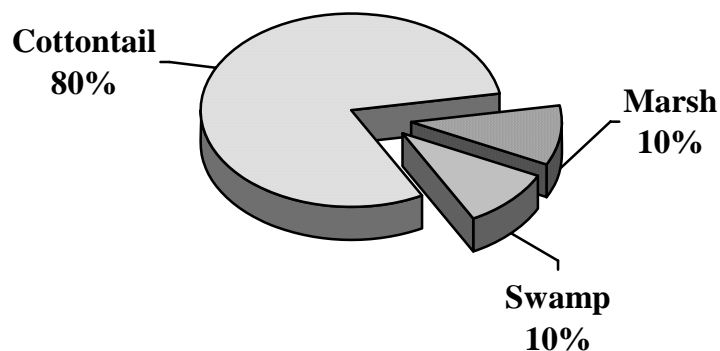
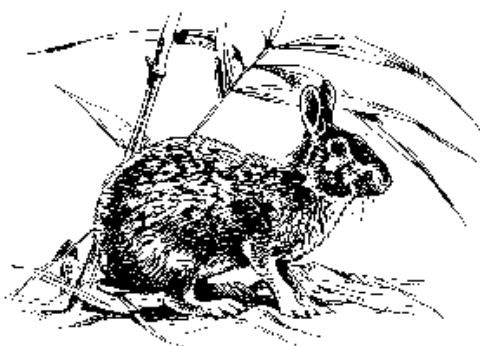


Figure 2. Reported species composition of rabbits harvested by cooperators, South Carolina Rabbit Hunter Survey, 2005-06.

Historically, swamp rabbits have been documented only in the Savannah River drainage of Oconee, Pickens and Anderson Counties (Webster et. al. 1985, Platt and Bunch 2000). It is possible that some marsh rabbits are mistakenly identified as swamp rabbits. Cooperators are provided with a fact sheet describing how to distinguish the three species of rabbits.



REGIONAL RESULTS

Table 1 is a summary of hunting activity in each game zone. Game Zone 2 led the state in hunter activity with 250 hunts and 1,070 hours hunted.

Table 1. Results by game zone, South Carolina Rabbit Hunter Survey, 2005-06.

| GAME ZONE | NUMBER OF HUNTS | HOURS HUNTED | RABBITS JUMPED PER HOUR* | RABBITS HARVESTED PER HOUR* |
|--------------|--------------------|-----------------|--------------------------------|-----------------------------------|
| Zone 1 | 36 | 143.5 | 0.98 (140) | 0.44 (63) |
| Zone 2 | 250 | 1,070.0 | 1.46 (1565) | 0.94 (1008) |
| Zone 3 | 14 | 56.5 | 1.26 (71) | 0.51 (29) |
| Zone 4 | 146 | 715.0 | 1.32 (945) | 0.81 (581) |
| Zone 5 | 13 | 65.0 | 1.55 (101) | 0.86 (56) |
| Zone 6 | 11 | 55.0 | 1.60 (88) | 0.87 (48) |
| Zone 7 | 0 | 0 | 0 | 0 |
| Zone 8 | 64 | 301.5 | 1.60 (481) | 0.96 (289) |
| Zone 9 | 15 | 99.0 | 1.45 (144) | 1.01 (100) |
| Zone 10 | 0 | 0 | 0 | 0 |
| Zone 11 | 39 | 212.5 | 1.13 (240) | 0.68 (144) |

* Parentheses indicate total number of rabbits

Table 2 is a summary of woodcock and quail flushed in each game zone. Statewide, quail flushes decreased to 0.03 coveys per hour. The number of coveys flushed decreased from 130 in 2004-05 to 81 in 2005-06. This was the tenth year data were collected on number of woodcocks flushed. Woodcocks flushed per hour decreased from 0.07 to 0.05 and the number of woodcocks flushed also decreased from 221 to 127 for 2005-06.

Table 2. Woodcock and quail flushed by game zone, South Carolina Rabbit Hunter Survey, 2005-2006.

| GAME ZONE | WOODCOCKS FLUSHED PER HOUR | WOODCOCKS FLUSHED | COVEYS FLUSHED PER HOUR | COVEYS FLUSHED |
|--------------|----------------------------------|----------------------|-------------------------------|-------------------|
| Zone 1 | 0.00 | 0 | 0.03 | 4 |
| Zone 2 | 0.04 | 46 | 0.03 | 32 |
| Zone 3 | 0.00 | 0 | 0.02 | 1 |
| Zone 4 | 0.05 | 37 | 0.01 | 10 |
| Zone 5 | 0.03 | 2 | 0.00 | 0 |
| Zone 6 | 0.02 | 1 | 0.13 | 7 |
| Zone 7 | 0.00 | 0 | 0.00 | 0 |
| Zone 8 | 0.06 | 18 | 0.07 | 20 |
| Zone 9 | 0.04 | 4 | 0.05 | 5 |
| Zone 10 | 0.00 | 0 | 0.00 | 0 |
| Zone 11 | 0.09 | 19 | 0.01 | 2 |

A majority (73.5 %) of the rabbit hunting activity documented in South Carolina occurred in the Piedmont Region (432 hunts) and the least amount of activity occurred in the Pee Dee at 3% (15 hunts) (Fig. 3). The highest rabbit-jumping rate (1.54) was recorded in the Midlands (91 hunts). The Pee Dee, Piedmont, and Low Country recorded 1.45, 1.37, and 1.23 rabbits jumped per hour, respectively. But the sample sizes in the Pee Dee (15 hunts) and Midlands (91 hunts) were lower than in the Piedmont (432 hunts) (Fig. 4).

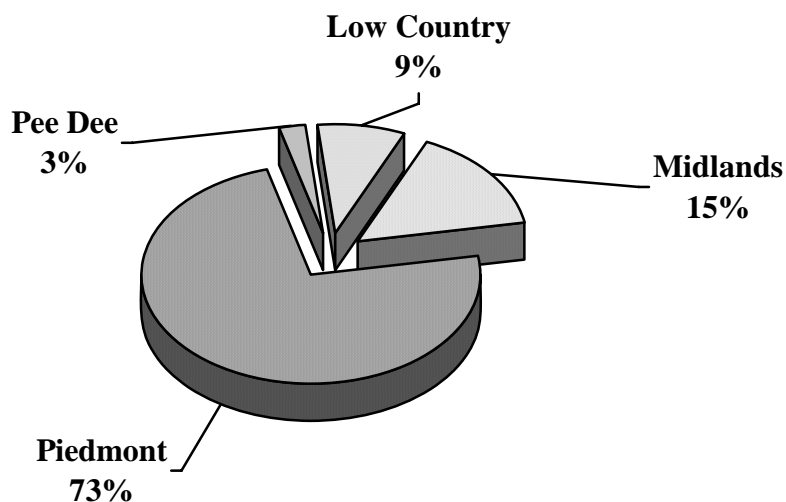


Figure 3. Percentage of expended hunting time by region, South Carolina Rabbit Hunter Survey, 2005-2006.

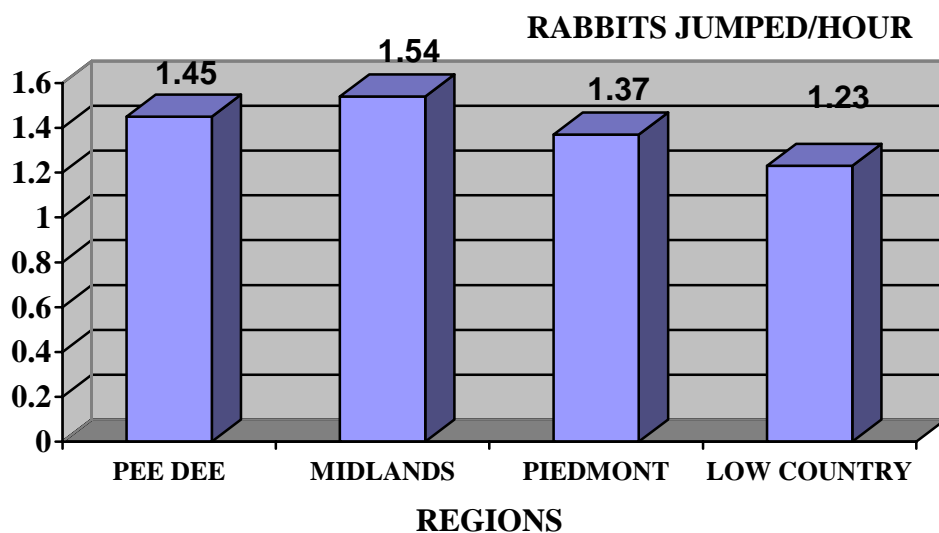


Figure 4. Average number of rabbits jumped per hour by region, South Carolina Rabbit Hunter Survey, 2005-2006.

COUNTY RESULTS

Hunters from 32 of the 46 counties in South Carolina reported rabbit hunting activity during the 2005-2006 season. Chester County led the state in hunter effort (hours hunted) with hunters logging 249 hours in the field during 50 hunts. Following Chester in hunter effort were Saluda (222.5 hours, 46 hunts) and McCormick (168.5 hours, 38 hunts).

The top five counties, in terms of rabbits jumped per hour (based on a minimum of 25 hunts), were: Lee (2.09), Saluda (1.81), Newberry (1.62), McCormick (1.54), and Fairfield (1.39). Jumping rates may have variables affecting them such as shooting (or not shooting) on the initial jump, cover thickness delaying a killing shot during the chase, and letting the dogs run for exercise or training. However, jumping rates do give an index to the relative abundance of rabbits in a given area.

COMPARISON TO 2004-05 SURVEY

The number of individuals provided with data sheets decreased from 201 to 162. Individuals responding decreased from 42 to 34 however the response rate remained at 21%. Number of hunts (588) recorded by all hunting parties decreased from 767 with a decrease in total hours afield from 3,244.5 to 2,718 hours. Average hunt length increased slightly from 4.2 to 4.6 hours. The minimum number of man-hours expended by rabbit hunters and their companions also decreased from 12,978 to 10,872.

Number of rabbits jumped per hour decreased from 1.57 in 2004-05 to 1.39 in 2005-06. Rabbits harvested per hour also decreased from 0.98 to 0.85.

The number of quail coveys flushed while rabbit hunting, 0.03 coveys per hour, decreased from last year and number of coveys flushed decreased from 130 to 81 in 2005-06.

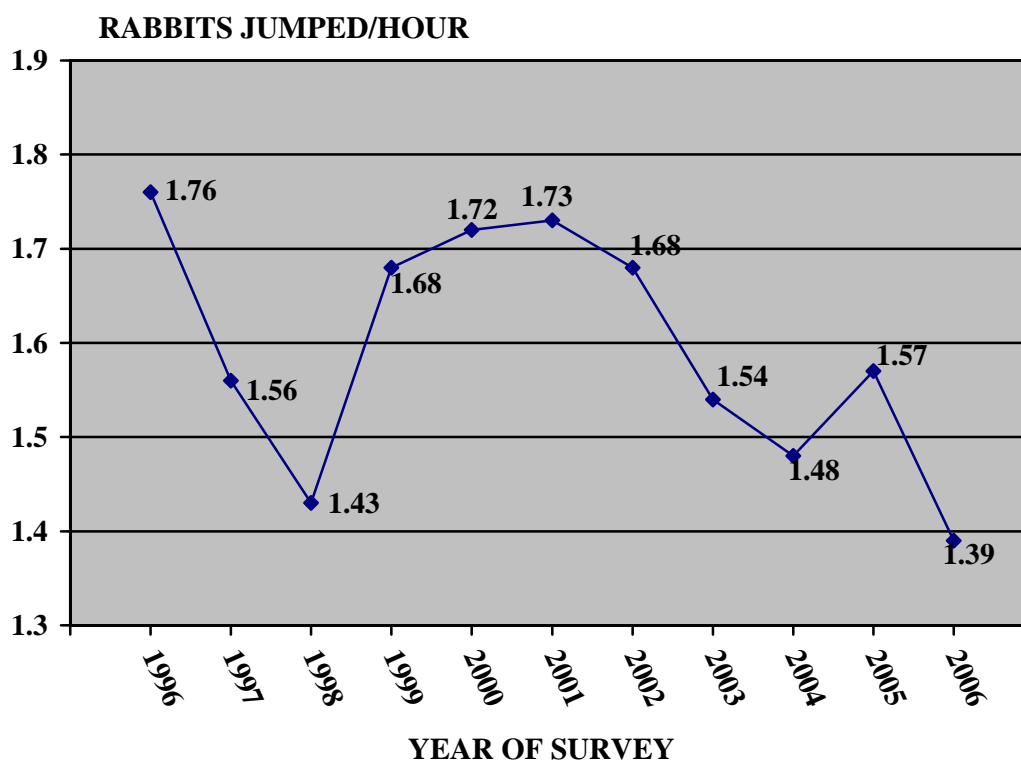
The number of counties reporting rabbit hunting activity decreased from 33 to 32 this past season. In 2005-06, Chester, Saluda and McCormick Counties were first, second and third, respectively, in hunter effort (hours hunted), followed by Hampton and Abbeville Counties. In terms of rabbits jumped per hour (minimum of 25 hunts), Lee remained at number one, Saluda came in second, and Newberry came in third, followed by McCormick and Fairfield, respectively.

Table 3 summarizes the data collected for the past 10 years of the survey and Figure 5 shows the general trend in rabbits jumped per hour. Both Table 3 and Figure 5 show a downward trend in number of rabbits jumped per hour from 1995-96 through 1997-98. The number of rabbits jumped per hour increased for the 1998-99 season and remained consistent until 2002-03. For 2002-03, the number of rabbits jumped per hour decreased from 1.68 to 1.54, with another decrease in 2003-04 (1.48). The 2004-05 season showed an increase in the number of rabbits jumped per hour of 1.57 with a significant decrease in 2005-06 (1.39).

Table 3. Statewide results, South Carolina Rabbit Hunter Survey, 1996-2006.

| YEAR OF SURVEY | RABBITS JUMPED PER HOUR | RABBITS HARVESTED PER HOUR | QUAIL COVEYS FLUSHED PER HOUR |
|----------------|-------------------------|----------------------------|-------------------------------|
| 1995-96 | 1.76* | 1.02 | 0.04 |
| 1996-97 | 1.56* | 0.93* | 0.04 |
| 1997-98 | 1.43* | 0.77* | 0.04 |
| 1998-99 | 1.68* | 0.93* | 0.04 |
| 1999-00 | 1.72 | 0.98 | 0.03 |
| 2000-01 | 1.73 | 1.00* | 0.03 |
| 2001-02 | 1.68 | 1.00 | 0.04 |
| 2002-03 | 1.54* | 0.92* | 0.03 |
| 2003-04 | 1.48* | 0.90 | 0.04 |
| 2004-05 | 1.57* | 0.98* | 0.05 |
| 2005-06 | 1.39* | 0.84* | 0.03 |

*Significantly different from the previous year ($P < 0.05$)

**Figure 5.** Rabbits jumped per hour, South Carolina Rabbit Hunter Survey, 1996-2006.

COOPERATOR COMMENTS

As a whole, most cooperators rated the 2005-06 rabbit-hunting season as good or fair with 12.5% rating the season as poor (Fig. 6). Cooperators rated the performance of their dogs as good or fair with only 3.8% rating the dogs as poor (Fig. 7).

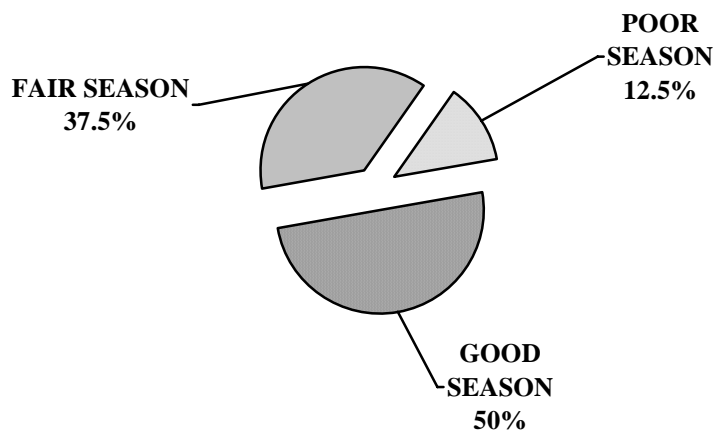


Figure 6. Rating of season quality by cooperators, South Carolina Rabbit Hunter Survey, 2005-2006.

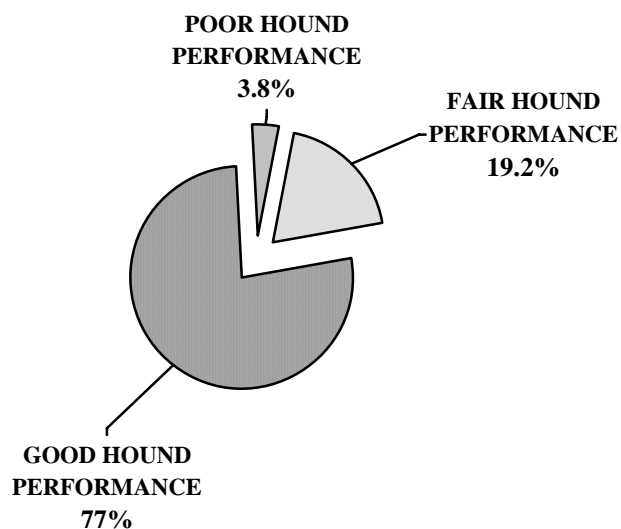


Figure 7. Rating of hound performance by cooperators, South Carolina Rabbit Hunter Survey, 2005-2006.

Cooperators reported weather conditions (dry and warm days in early season and very wet days in late season) as having a negative influence (less days in the field) on hunting this past year. A few cooperators stated that rabbit numbers had increased but the availability of public lands had decreased. A majority of the cooperators reported rabbits appeared to be in good physical condition. One cooperator reported “last three Saturdays were cold and rainy, but we still enjoyed the hunts.” Another cooperator stated “seemed to be a lot of rabbits, we had a lot of long, long runs, lots of fun and enjoyed hearing all the long races.”

SUMMARY

The 2005-06 Rabbit Hunter Survey marked the 15th year of building a database on rabbit populations and rabbit hunter success in South Carolina. Plans are to continue this survey during the 2006-07 season. Additional efforts will be made to increase cooperator response as well as reporting accuracy. **Data cannot be entered without hunter name and mailing address or if all hunts are submitted as one entry. Three cooperators reported harvesting 115 rabbits but did not report which species; therefore the number 115 was analyzed for harvest amount but not species designation.**

LITERATURE CITED

Webster, W. D., J. F. Parnell, Jr. and W. C. Biggs, Jr. 1985. Mammals of the Carolinas, Virginia and Maryland. The University of North Carolina Press.

Platt, Steven G., and Mary Bunch. 2000. Distribution and Status of the Swamp Rabbit in South Carolina. Proc Annual Conference, Southeast Association Fish and Wildlife Agencies 54:407-413.